

What Is Claimed Is:

1. A heat pipe heat spreader comprising:
a substantially L-shaped enclosure having an internal surface and a plurality of post projecting from said internal surface;
a working fluid disposed within said enclosure; and
a grooved wick disposed on at least a portion of said internal surface and including a plurality of individual particles having an average diameter, said grooved wick including at least two lands that are in fluid communication with one another through a particle layer disposed between said at least two lands that comprises less than about six average particle diameters.
2. A heat pipe according to claim 1 wherein said particle layer comprises a thickness that is less than about three average particle diameters.
3. A heat pipe according to claim 1 wherein said particles are formed substantially of copper.
4. A heat pipe according to claim 1 wherein six average particle diameters is within a range from about .005 millimeters to about .5 millimeters.
5. A method for making a heat pipe wick on an inside surface of a heat pipe container, comprising the steps of:

- (a) positioning a mandrel having a grooved contour and a plurality of recesses within a portion of said container;
- (b) providing a slurry of metal particles having an average particle diameter and that are suspended in a viscous binder;
- (c) coating at least part of the inside surface of said container with said slurry so that said slurry conforms to said grooved contour of said mandrel and forms a layer of slurry between adjacent grooves that comprises no more than about six average particle diameters;
- (d) drying said slurry to form a green wick; and,
- (e) heat treating said green wick to yield a final composition of the heat pipe wick.

6. A heat pipe wick formed according to the method of claim 5.

7. A heat pipe wick formed according to the method of claim 5 wherein said layer of slurry comprises a thickness that is less than about three average particle diameters.

8. A heat pipe wick formed according to the method of claim 5 wherein said layer of slurry comprises particles that are formed substantially of copper.

9. A heat pipe wick formed according to the method of claim 5 wherein six of said average particle diameters is within a range from about .05 millimeters to about .25 millimeters.

10. A heat pipe wick formed according to the method of claim 5 formed with in a container having a working fluid so as to form a heat pipe.

11. A heat pipe heat spreader comprising:
a substantially L-shaped enclosure having an internal surface and a plurality of post projecting from said internal surface;
a working fluid disposed within said enclosure; and
a grooved wick disposed on at least a portion of said internal surface and including a plurality of individual particles having an average diameter, said grooved wick including at least two spaced-apart lands that are in fluid communication with one another through a particle layer disposed between said at least two spaced-apart lands that comprises less than about six average particle diameters.

12 A heat pipe heat spreader according to claim 11 wherein said posts are coated with a sintered material.

13. A heat pipe heat spreader comprising:
an enclosure having an internal surface and a plurality of post projecting from said internal surface wherein said posts are (i) arranged in a selected pattern that is more

dense in one portion of said internal surface, and (ii) coated with a sintered wick powder;

a working fluid disposed within said enclosure; and

a grooved wick disposed on at least a portion of said internal surface and including a plurality of individual particles having an average diameter, said grooved wick including at least two spaced-apart lands that are in fluid communication with one another through a particle layer disposed between said at least two spaced-apart lands that comprises less than about six average particle diameters.

14. A heat pipe according to claim 13 wherein said particle layer comprises a thickness that is less than about three average particle diameters.

15. A heat pipe according to claim 13 wherein said particles are formed substantially of copper.

16. A heat pipe according to claim 13 wherein six average particle diameters is within a range from about .005 millimeters to about .5 millimeters.